

AUTHOR INDEX

- Agostoni, E., Zocchi, L. and Macklem, P. T., Lung border sweep upon phrenic stimulation: dynamic fall in pleural liquid pressure, 379
- Agostoni, P., see Deffebach, M. E., 147
- Alfaro, R. T., see Santolaya, R. B., 253
- Asson-Batres, M. A., Stock, M. K., Hare, J. F. and Metcalfe, J., O₂ effect on composition of chick embryonic heart and brain, 101
- Bartlett, Jr., D., see Oyer, L. M., 195
- Bartlett, Jr., D., see Zhou, D., 187
- Bergman, H. L., see Wood, C. M., 1
- Betticher, D. C., see Geiser, J., 31
- Bicudo, J. E. P. W., see Longworth, K. E., 263
- Brizzee, B. L. and Walker, B. R., Chronic propranolol attenuates hypoxic pulmonary vasoconstriction in conscious rats, 55
- Burggren, W. W., see West, N. H., 337
- Burton, F. G., Stevenson, J. M. and Tullett, S. G., The relationship between eggshell porosity and air space gas tensions measured before and during the parafoetal period and their effects on the hatching process in the domestic fowl, 89
- Bush, R., see Iscoe, S., 215
- Cross, C. E., see Hornof, W. J., 275
- Dawson, T. J., see Hallam, J. F., 309
- Deffebach, M. E., Agostoni, P., Kirk, W. and Lakshmarayan, S., Pulmonary artery infusion of prostacyclin increases lobar bronchial blood flow, 147
- England, S. J., see Rubinstein, I., 291
- Estenne, M., see Kinnear, W., 75
- Fedde, M. R., Orr, J. A., Shams, H. and Scheid, P., Cardiopulmonary function in exercising bar-headed geese during normoxia and hypoxia, 239
- Fedderspiel, W. J., Pulmonary diffusing capacity: implications of two-phase blood flow in capillaries, 119
- Fisher, P. E., see Hornof, W. J., 275
- Gallaugh, P., see Perry, S. F., 351
- Gandevia, S. C. and Macefield, G., Projection of low-threshold afferents from human intercostal muscles in the cerebral cortex, 203
- Geiser, J. and Betticher, D. C., Gas transfer in isolated lungs perfused with red cell suspension or hemoglobin solution, 31
- Gunther, R. A., see Hornof, W. J., 277
- Haji, A., see Takeda, R., 173
- Hallam, J. F., Dawson, T. J. and Holland, R. A. B., Gas exchange in the lung of dasyurid marsupial: morphometric estimation of diffusion capacity and blood oxygen uptake kinetics, 309
- Hare, J. F., see Asson-Batres, M. A., 101
- Higenbottam, T., see Kinnear, W., 75
- Hoffstein, V., see Rubinstein, I., 291
- Holland, R. A. B., see Hallam, J. F., 309
- Hook, C., see Meyer, M., 65
- Hornof, W. J., Schelegle, E., Kammerman, M., Gunther, R. A., Fisher, P. E. and Cross, C. E., Ozone-induced accelerated lung clearance of ^{99m}Tc-DTPA aerosol in conscious sheep, 277
- Hukuhara, T., see Takeda, R., 173
- Inoue, T. and Kannan, M. S., Platelet-activating factor-induced functional changes in the guinea pig trachea in vitro, 157
- Iscoe, S. and Bush, R., Responses of pulmonary slowly adapting receptors to airway occlusion in cat, 215
- Jacobi, M. S., Patil, C. P. and Saunders, K. B., The transient ventilatory response to carbon dioxide at rest and in exercise in man, 225
- Jelkmann, W., see Pagel, H., 111
- Jones, J. H., see Longworth, K. E., 263
- Kammerman, M., see Hornof, W. J., 277
- Kannan, M. S., see Inoue, T., 157

- Kinkead, K., see Perry, S.F., 365
 Kinkead, R., see Perry, S.F., 351
 Kinnear, W., Higenbottam, T., Shaw, D., Wallword, J. and Estenne, M., Ventilatory compensation for changes in posture after human heart-lung transplantation, 75
 Kirk, W., see Deffebach, M.E., 147
 Knuth, S.L., see Oyer, L.M., 195
- Lahiri, S., see Santolaya, R.B., 253
 Lakshmarayan, S., see Deffebach, M.E., 147
 Lallier, F. and Truchot, J.P., Hemolymph oxygen transport during environmental hypoxia in the shore crab, *Carcinus maenas*, 323
 Longworth, K.E., Jones, J.H., Bicudo, J.E.P.W., Taylor, C.R. and Weibel, E.R., High rate of O₂ consumption in exercising foxes: large P_{O₂} difference drives diffusion across the lung, 263
- Macefield, G., see Gandevia, S.C., 203
 Macklem, P.T., see Agostoni, E., 379
 Martins, M.A., Saldiva, P.H.N. and Zin, W.A., Evoked bronchoconstriction: testing three methods for measuring respiratory mechanics, 41
 Mathieu-Costello, O., see Poole, D.C., 21
 Matsumoto, S., Effects of ammonia and histamine on lung irritant receptors in the rabbit, 301
 Metcalfe, J., see Asson-Batres, M.A., 101
 Meyer, M., Rieke, H., Hook, C. and Piiper, J., Helium and SF6 washout from dog lungs during high-frequency ventilation, 65
- Orr, J.A., see Fedde, M.R., 239
 Oyer, L.M., Knuth, S.L., Ward, D.K. and Bartlett, Jr., D., Reflex inhibition of crural diaphragmatic activity by esophageal distension in cats, 195
- Pagel, H., Jelkmann, W. and Weiss, C., O₂-supply to the kidneys and the production of erythropoietin, 111
 Patil, C.P., see Jacobi, M.S., 225
 Perry, S.F. and Kinkead, K., The role of catecholamines in regulating arterial oxygen content during acute hypercapnic acidosis in rainbow trout (*Salmo gairdneri*), 365
 Perry, S.F., Kinkead, R., Gallaugher, P. and Randall, D.J., Evidence that hypoxemia promotes catecholamine release during hyper-
- capnic acidosis in rainbow trout (*Salmo gairdneri*), 351
 Perry, S.F., see Wood, C.M., 1
 Piiper, J., see Meyer, M., 65
 Poole, D.C. and Mathieu-Costello, O., Skeletal muscle capillary geometry: adaptation to chronic hypoxia, 21
- Randall, D.J., see Perry, S.F., 351
 Randall, D.J., see Wood, C.M., 1
 Rieke, H., see Meyer, M., 65
 Rubinstein, I., England, S.J., Zamel, N. and Hoffstein, V., Glottic dimensions in healthy men and women, 291
- Saldiva, P.H.N., see Martins, M.A., 41
 Santolaya, R.B., Lahiri, S., Alfaro, R.T. and Schoene, R.B., Respiratory adaptation in the highest inhabitants and highest Sherpa mountaineers, 253
 Saunders, K.B., see Jacobi, M.S., 225
 Scheid, P., see Fedde, M.R., 239
 Scheid, P., see Shams, H., 135
 Schelegle, E., see Hornof, W.J., 277
 Schoene, R.B., see Santolaya, R.B., 253
 Shams, H. and Scheid, P., Efficiency of parabronchial gas exchange in deep hypoxia: measurements in the resting duck, 135
 Shams, H., see Fedde, M.R., 239
 Shaw, D., see Kinnear, W., 75
 Smits, A.W., see West, N.H., 337
 St. John, W.M., see Zhou, D., 187
 Stevenson, J.M., see Burton, F.G., 89
 Stock, M.K., see Asson-Batres, M.A., 101
- Takeda, R., Haji, A. and Hukuhara, T., Diazepam potentiates postsynaptic inhibition in bulbar respiratory neurons of cats, 173
 Taylor, C.R., see Longworth, K.E., 263
 Truchot, J.P., see Lallier, F., 323
 Tullett, S.G., see Burton, F.G., 89
- Walker, B.R., see Brizzee, B.L., 55
 Wallword, J., see Kinnear, W., 75
 Ward, D.K., see Oyer, L.M., 195
 Weibel, E.R., see Longworth, K.E., 263
 Weiss, C., see Pagel, H., 111
 West, N.H., Smits, A.W. and Burggren, W.W., Factors terminating nonventilatory periods in the turtle, *Chelydra serpentina*, 337
 Wood, C.M., Perry, S.F., Wright, P.A., Bergman,

- H.L. and Randall, D.J., Ammonia and urea dynamics in the Lake Magadi tilapia, a ureotelic teleost fish adapted to an extremely alkaline environment, 1
- Wright, P.A., see Wood, C.M., 1
- Zamel, N., see Rubinstein, I., 291
- Zhou, D., St. John, W.M. and Bartlett, Jr., D., Activities of pulmonary stretch receptors during ventilatory cycles without lung inflation, 187
- Zin, W.A., see Martins, M.A., 41
- Zocchi, L., see Agostoni, E., 379



SUBJECT INDEX

- Acclimatization to high altitude, 135, 253
Acid-base balance, 1
 respiratory acidosis, 351, 365
 respiratory alkalosis, 253
Air cell, 89
Air sacs, 135
Airway resistance, 41
Airway smooth muscle, 41, 157, 301
Altitude
 high – acclimatization, 135, 239, 253
Alveolar gas
 – composition, 253
Ammonia-ammonium, 1
Animals
 bar-headed goose, 135, 239
 cat, 173, 187, 195, 215
 chicken, 89, 101, 135
 Crustaceans, 323
 dog, 65, 147, 379
 duck, 135
 fox, 263
 fowl, 89, 101
 guinea-pig, 41, 157
 humans, 75, 203, 225, 253, 291
 marsupials, 309
 pig, 139
 rabbit, 31, 301
 rat, 1, 21, 51, 55, 111, 129
 sheep, 275
 shore crab, 323
 Tilapia, 1
 trout, 351, 365
 turtle, 337
Arterial blood
 – gas tensions, 239
Asthma, 301
Atropine, 301

Beta-receptor, 55
Birds
 respiration in –, 89, 135
Blood
 effect of temperature on –, 1
Blood gas
Bohr effect, 323
 oxygen dissociation curve, 323
Bohr effect, 323
Brain, 101
 cerebral cortex, 203
Breathing pattern, 215
Breuer-Hering reflexes, 187, 215
Bronchomotricity, 41, 157, 301

Capillary circulation, 21, 239
Carbon dioxide
 ventilatory response to –, 225, 337
Cardiac output, 55, 239, 263
Catecholamines, 351, 365
Chemoreceptors
 arterial –, 225, 337
Chest wall
 – mechanics, 379
Conductance, 89, 135
Control of breathing, 75, 215
 carbon dioxide
 ventilatory response to –, 225
 chemoreceptors
 arterial, 225, 337
 – in muscular exercise, 239
 oxygen
 ventilatory response to –, 337
 respiratory centers, 173
Convection, 65
Cytochrome, 101
Diaphragm, 195
Diazepam, 173
Diffusion
 – of gases, 65, 135
Diffusive conductance, 31
DNA, 101

Egg shell, 89
Electromyogram, 195
Erythrocyte, *see* Red blood cell
Erythropoietin, 111
Exercise, muscular, 225, 239, 263
 control of breathing, 239

- Frequency of breathing, *see* Breathing pattern
- Glottis, 299
- Heart, 55, 101
- Helium
— washout, 65
- Hematocrit, 119, 253, 309
- Hemocyanin, 323
- Hemoglobin, 253
- Hemolymph, 323
- Hering-Breuer reflexes, 187, 215
- Heymans-type chemoreceptors, 225
- High-frequency ventilation, 65
- Histamine, 301
- Hypercapnia, 225, 337, 351, 365
- Hyperoxia, 101, 337
- Hypoxia, 21, 55, 101, 111, 135, 337, 351
altitude, 239
- Incubation of egg, 89
- Intercostal muscles, 203
- Intracellular pH, 365
- Irritant receptor, 301
- Kidney, 111
- Lactate, 323
- Larynx, 291
- Lung
diffusing capacity, 31, 119, 135, 263, 309
mechanoreceptors, 75
volume, 291
- Mechanics of breathing, 75
airway resistance, 41
chest wall, 379
diaphragm, 195
pleural surface pressure, 379
- Mitochondrion, 239
- Models
— in respiratory physiology, 65, 119
- Morphometry, 263, 309
- Muscle
respiration of skeletal, 21, 239
- Muscular exercise, *see* Exercise, muscular
- Oxygen, *see* Altitude, Blood gas, Diffusion and
Hypoxia
ventilatory response to —, 337
- Oxygen consumption, 101, 239, 309
maximal —, 263
- Oxygen dissociation curve, 323
- Ozone, 275
- P_{50} , 323
- Periodic breathing, 337
- pH, *see* Acid-base balance
- Phrenic nerve, 187, 195
- Pipping, 89
- Plasma, *see* Blood
- Pleural surface pressure, 379
- Pollution, 275, 301
- Posture, 75
- Propranolol, 55, 365
- Prostaglandins, 147
- Pulmonary circulation, 55, 147, 263
pulmonary capillary volume, 263
- Pulmonary diffusing capacity, 31, 119, 135, 263,
309
- Pulmonary receptors, 75, 187, 215, 301
- Reaction rates of blood gases, 31, 119, 309
- Red blood cell, 31, 119
- Regulation of respiration, *see* Control of breathing
- Respiratory acidosis, 351, 365
- Respiratory alkalosis, 253
- Respiratory centers, 173
- Respiratory frequency, *see* Breathing pattern
- Respiratory reflexes
— of Breuer-Hering, 187, 215
- Respiratory sensations, 203
- Respiratory stimuli
carbon dioxide (hypercapnic) drive, 225
oxygen drive, 337
see also Control of breathing
- Root effect, 365
- Skeletal muscle, 21
- Smooth muscle, 157
- Stretch receptors, 75, 187, 215, 301
- Sulfur hexafluoride, 65
- Temperature
effect of body — on breathing, 1
- Techniques in respiratory physiology
washout, 41
- Tidal volume, *see* Breathing pattern and Lung,
volume
- Trachea, 157
- Transplantation, 75
- Ureotelism, 1
- Unstirred layer, 31

Vagal afferents or efferents, 187
Vagus nerve
block or section of -, 75, 187

Ventilatory response to hypercapnia, 225, 337
Ventilatory response to hyperoxia, 337
Ventilatory response to hypoxia, 337

